

# Unit Planning Guide: Grade \_7\_ Unit \_3\_\_Equations and inequalities

Unit Title: Equations and Inequalities	Pacing (Duration of Unit):
Grade:7	Buffer Day(s):

## Desired Results

## Transfer Goals

*Students will be able to independently use their learning to:*

- Construct equations and inequalities to represent quantities in real world or mathematical problems.
- Solve real world and mathematical problems using algebraic equations and inequalities.

## Established Goals (2011 MA Curriculum Frameworks Standards Incorporating the Common Core State Standards)

<p><b>Big Ideas:</b> (Statements and concepts written in teacher friendly language which reflect the important [but not obvious] generalizations we want students to be able to arrive at. These are used by the teacher to focus daily instruction.)</p> <ul style="list-style-type: none"> <li>Equations and inequalities can be used to represent quantities in a real world mathematical situation</li> <li>Inverse operations maintain the balance in an equation or inequality.</li> <li>The solution(s) of inequalities can be represented as a graph and interpreted in the context of problems.</li> </ul>	<p><b>Essential Questions:</b> (Questions which frame ongoing and important inquiries about the big ideas. They are written for students and used in daily instruction to help engage students in meaningful thinking.)</p> <ul style="list-style-type: none"> <li>How can change be described mathematically?</li> <li>Why are equations and inequalities essential in decision making?</li> </ul>
<p><b>Standards (Priority Standards in bold)</b></p> <p><b>7.EE.4 Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</b></p> <p><b>7.EE.4a:</b> Solve word problems leading to equations of the form <math>px + q = r</math> and <math>p(x + q) = r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach.</p> <p><b>7.EE.4b:</b> Solve word problems leading to inequalities of the form <math>px + q &gt; r</math> or <math>px + q &lt; r</math>, where <math>p</math>, <math>q</math>, and <math>r</math> are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem.</p>	<p><b>WiDA Standards (ELL)</b></p> <ul style="list-style-type: none"> <li></li> <li></li> <li></li> <li></li> </ul> <p>To be completed in collaboration with the ELL Department</p>

**Meaning (\*Mostly assessed through Performance Tasks/Assessments)**

**Acquisition (\*Mostly assessed through traditional summative assessments)**

**Knowledge:** Key basic concepts, facts, and key terms (written in phrases) students should be able to recall independently.

*Students will know ...*

- *The difference between expressions, equations and inequalities and how they are related*
- *That real-world situations can be modeled using expressions, equations, and inequalities and their graphs*
- *The inequality symbol in the inequality changes when multiplying or dividing by a negative*
- *Academic vocabulary: evaluate, solve, expression, equation, inequality*

**Skills:** The discrete skills and process students should be able to use independently (Bloom's Level of Learning should be noted in parentheses.)

*Students will be skilled at:*

- *writing simple equations and inequalities from a real world situation*
- *Solving multi-step equations using different algorithms ( inverse operations, multiplicative inverse, distributive property and combining like terms)*
- *write inequalities from a real world situation*
- *Solving multi-step inequalities using the algorithms*
- *Graphing the solution set of inequalities on a number line*
- *Translating a graphed solution into an inequality*



